

## Survey of Some Mushrooms in Al-Taif Governorate of Saudi Arabia

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**Abstract:** Fourteen species of mushrooms belonging to nine genera were collected and identified from seven localities in Al-Taif Governorate of Saudi Arabia. Al-Rouddof region was found to be the richest locality followed by sised and Al-Shafa. Only one species was recorded in Sad Akrama, Al-Mathnah, Wadi Mihrim and Al-Hada localities.

**Key words:** Mushroom % Al-Taif % Saudi Arabia

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### INTRODUCTION

Classification of fungi is always suffering from contradictions. This is referred to the lack of complete knowledge about all the fungal organisms. Higher fungi which are related to Basidiomycotina; especially mushrooms, are regarded as spore droppers referring to the method of spore falling from basidia [1].

The survey of wild mushrooms were reported by different researchers [2 - 17].

Little informations were reported about the mushrooms of Saudi Arabia. So the aim of the present investigation was to identify the wild mushroom in different places of Al-Taif Governorate.

### MATERIALS AND METHODS

**Survey of mushrooms:** Different genera of mushrooms were collected from seven localities in Al-Taif Governorate during the period from December 2002 to June 2003. These localities are presented in the map provided in Fig. 1.

Samples were found in damp places of public gardens or on the decayed roots of the dead trees. Samples were photographed and collected from their natural sites and kept for laboratory identification. The collected fruiting bodies were identified according to Breitenbach and Kranzlin [18]; Ellis and Ellis [19]; Klan [20]; Pacioni [21] and Phillips [1].

### RESULTS AND DISCUSSION

The data presented in Table 1 illustrates a list of the identified wild mushrooms, which were collected from

seven localities in Al-Taif Governorate of Saudi Arabia. Fourteen species belonging to nine genera were collected and identified.

**Description of collected wild mushrooms:** Plate I represent all the identified mushrooms:

(1)- *Agaricus arvensis*: Cap, subglobose becoming flattened, silky, white, turning yellow when touched. Gills crowded grayish turning pinkish and eventually blackish, with white edge. Stipe, club-shaped, white turning yellow. Edible.

(2)- *Agaricus bisporus*: Cap, white then rose brownish when mature, fleshy, globose or hemispherical then convex. Gills rose-white in young, reddish-brownish in mature fungi. Stipe, white sometimes rose in young specimens. Edible.

(3)- *Agaricus augustus*: Cap, initially subglobose, flat at top, then convex and eventually flattened, reddish-brown on a yellow-cream background. Gills crowded, free, white then grey, pink and eventually chocolate brown. Stipe, cylindrical, enlarged at base, solid then slightly hollow, white turning yellowish with age. Edible.

(4)- *Lepiota procera*: Cap, cracked, coarsely scaly, brown. Gills whitish. Stipe, hollow when mature, whitish, ochre, with brown stripes and coarse scales along its entire length. Edible

(5)- *Lepiota rhacodes*: Cap, wide, grey-brown with woolly filaments or overlapping scales. Stipe, white,

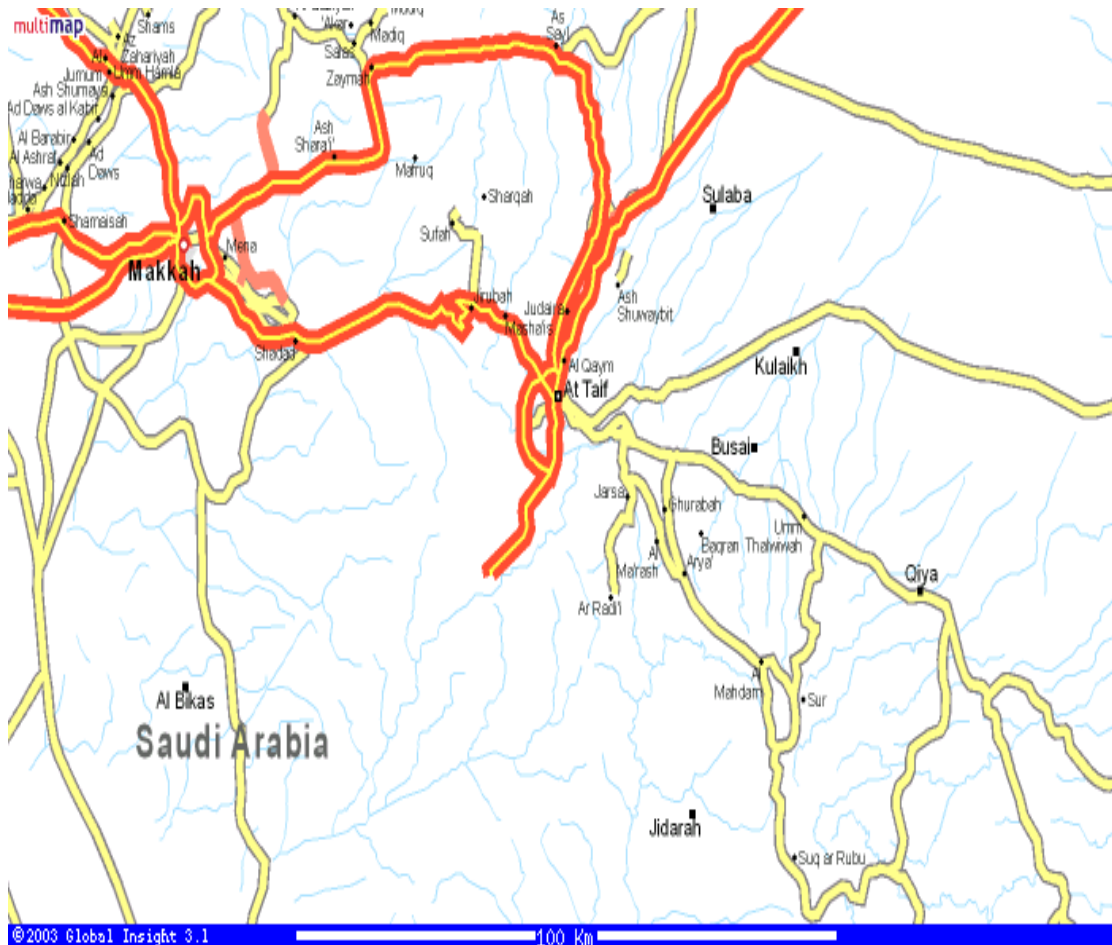


Fig. 1: A map of Saudi Arabia showing the Al-Taif governorate from which the fungi were collected

red-brown when old, smooth, with a bulb white ring. Edible, but may cause gastric upsets in some people.

(6)- *Lepiota cristata*: Cap, white, with coarse light brown to grey-brown scales. Gills, whitish, free and swollen. Stipe, whitish, brownish at base, smooth, ring white and narrow.

(7)- *Pleurotus ostreatus*: Cap, often imbricate, superposed violet-black to brownish-grey, fading with age. Gills creamy white. Stipe white smooth, enlarged at top. Edible.

(8)- *Pleurotus cornucopiae*: Cap, briefly convex and funnel-shaped, whitish or light grey. Gills whitish or cap-coloured, crowded, very decurrent on stipe. Stipe,

often ramified, nearly central to fairly eccentric, whitish full, almost completely covered by the extension of gills. Edible.

(9)- *Coprinus comatus*: Cap, white turning pink at margin then black, cylindrical when young, up to 20 cm in height. Gills white then pink, finally black, free, straight, crowded up to 1 cm long. Stipe, white then dirty white, narrowing towards top, with enlarged rooting base. Edible.

(10)- *Agrocybe cylindracea*: Cap, pale ochre-brown tending to fade to whitish from margin, convex, silky when dry, often cracked at disc. Gills whitish then greyish brown, fairly crowded. Stipe whitish tinged with pale ochre-brown narrowing towards base. Edible.



(1) *Agaricus arvensis*



(2) *Agaricus bisporus*



(3) *Agaricus augustus*



(4) *Lepiota procera*



(5) *Lepiota rhacodes*



(6) *Lepiota cristata*



(7) *Pleurotus ostreatus*



(8) *Pleurotus cornucopiae*



(9) *Coprinus comatus*



(10) *Agrocybe cylindracea*



(11) *Podaxis pistillaris*



(12) *Inocybe splendens*



(13) *Phaeolepiota aurea*



(14) *Boletus edulis*

Table 1: Mushroom collected from Al-Taif Governorate

	El-Roudaf	Secide	El-Shafa	Sad Akrama	El-Masnah	Wady Moharam	El-Hada
1- <i>Agaricus arvensis</i>	-	-	-	-	+	-	-
2- <i>A. bisporus</i>	+++	-	-	-	-	-	-
3- <i>A. augustus</i>	-	-	-	-	-	-	+
4- <i>Lepiota procera</i>	+++	-	-	-	-	-	-
5- <i>L. rhacodes</i>	+++	-	-	-	-	-	-
6- <i>L. cristata</i>	+	-	-	+	-	-	-
7- <i>Pleurotus ostreatus</i>	-	+	-	-	-	-	-
8- <i>P. cornucopiae</i>	+	-	-	-	-	-	-
9- <i>Coprinus comatus</i>	-	+	+	-	-	-	-
10- <i>Agrocybe cylindracea</i>	-	-	-	-	-	+	-
11- <i>Podaxis pistillaris</i>	-	+	-	-	-	-	-
12- <i>Inocybe splendens</i>	-	-	+++	-	-	-	-
13- <i>Phaelepiota aurea</i>	-	+	-	-	-	-	-
14- <i>Boletus edulis</i>	+	-	-	-	-	-	-

- = absent, + = present

**(11)- *Podaxis pistillaris*:** Cap, white turning yellow then black, cylindrical. Gills, white, free, straight and crowded. Stipe, white narrowing towards top, with enlarged bulbous base. Edible.

**(12)- *Inocybe splendens*:** Cap, first conical with edge raised, then convex with umbo, covered with radial fibrils. Gills whitish then brownish-ochreous, margin paler, adnate, sometimes slightly decurrent. Stipe cylindrical or suddenly enlarged into an almost marginate bulb, pure white finely striate at top. Not edible.

**(13)- *Phaelepiota aurea*:** Cap, golden ochre-yellow, first powdery then valvety and darker, convex. Gills rounded towards stipe, ochreous then rust-coloured, crowded. Stipe cylindrical, slightly enlarged at base, solid, with large ring. Edible, but can cause stomach upset.

**(14)- *Boletus edulis*:** Cap, hemispherical, convex then flattened, cuticle smooth, slightly viscous in damp weather, whitish, ochreous, light brown not uniform. Stipe solid, bulging or cylindrical, white or light ochre, covered by a reticulum first white then slightly darker than background. Edible.

Table 1 shows the distribution and frequency of wild mushrooms collected from Al-Taif Governorate. Al-Ruddaf was found to be the richest site. It contained 6 species from the total identified fourteen species. The highest frequency of occurrence was recorded for *Agaricus bisporus*; *Lepiota procera* and *L. rhacodes* (Photo 2, 4 and 5, respectively). On the other hand, the rare existed species were *Lepiota cristata*, *Pleurotus ostreatus* and *Boletus edulis* (Photo 6, 7 and 14, respectively).

Sided locality was found to be the second site, it contain four species named *Pleurotus ostreatus*, *Coprinus comatus*, *Podaxis pistillaris* and *Phaeolepiota aurea* (Photo 7, 9, 11 and 13, respectively). The third locality was El-Shafa, it contain two species. The highest frequency of occurrence was recorded for *Inocybe splendens* and the lowest one was *Coprinus comatus* (Photo 12 and 9, respectively).

On the other hand only one species was recorded on the other tested localities. *Agaricus arvensis* was found in Al-Mathnah (Photo 1). *Lepiota cristata* was recorded on Sad Akrama (Photo 6), *Agrocybe cylindracea* was found on Wadi Mihrim (Photo 10) and *Agaricus augustus* was recorded on Al-Hada site (Photo 3).

Some of these species were reported before by several workers. In Egypt, Assawah [3] reported *Agrocybe* spp., *Hebeloma* spp., *Lepiota* spp. and *Tricholoma* spp. Also Abu El-Souod *et al.* [12] reported thirteen species of mushrooms belonging to ten genera. These genera were *Agrocybe*, *Armillaria*, *Coprinus*, *Drosella*, *Hebeloma*, *Hygrophorus*, *Lepiota*, *Leptonia*, *Panaeolus* and *Tricholoma*. In Spain, Garcia *et al.* [22] and in Poland Falandysz *et al.* [23], identified *Coprinus campatus* while in USA, Richards [24] reported *Tricholoma* spp. Gray [25] reported that *Agaricus campestris* is common wild mushrooms in Europe and America.

Hayes [26] reported that natural geographic areas of mushrooms extends all over the northern Hemisphere outside the tropic and the arctic. Chin [27] recorded that twenty species of edible and poisonous mushrooms were collected from forests in Sarawak of the poisonous mushrooms were *Amanita excelsa*, *A. Phalloides*, *A. Pantherina*, *Clitocybe* sp. and *Nathopanus* sp. were included.

In China, edible mushrooms were also studied [13 - 15]. Also an *Agaricus Padanus* sp. was collected and identified in Italy [14]. Salzman *et al.* [28] used the neural signals to characterize the mushrooms.

Mushrooms can be used to solve several problems such as human nutrition and upgrade of waste products to be suitable for animal feed and hence avoiding waste pollution. So more studies should be carried out on mushrooms of Saudi Arabia.

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